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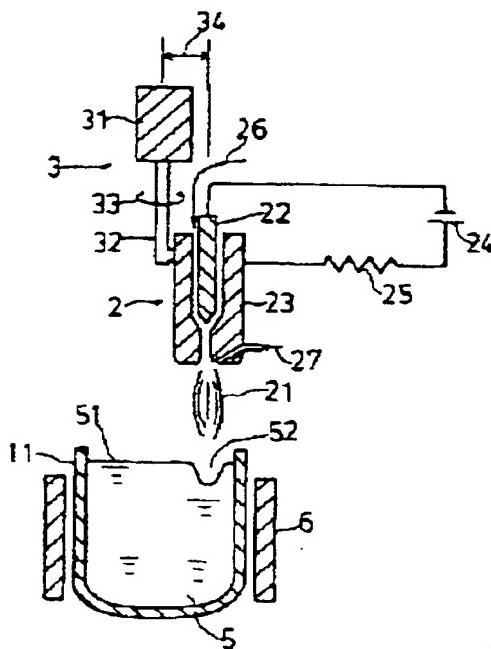
APPLICATION DATE : 10-05-91
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TITLE : METHOD AND DEVICE FOR REFINING SILICON



ABSTRACT : PURPOSE: To efficiently remove boron and carbon and to refine silicon by injecting a jet gas on the surface of molten silicon from a plasma torch which is horizontally moved above the melt surface.

CONSTITUTION: Molten silicon 5 is placed in a vessel 11 provided with a heater 6 for externally heating the vessel 11, and a plasma-jet gas 26 is injected on the surface of the molten silicon 5 from a plasma torch 2 to refine silicon. In this case, the torch 2 is horizontally moved above the melt surface. Ar, He or H₂ gases are used for the plasma-jet gas 26. The fire point 52 is moved horizontally on the melt surface 51 with the movement of the torch 2, hence the molten silicon is strongly agitated, and the removal of the boron and carbon is accelerated by the first-order reaction of the concn. An oxidizing gas such as H₂O and O₂ and the powder of silica, etc., are preferably mixed at the outlet of the torch into the plasma gas to be used.

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